

### **ABSTRACT OF THE DISCLOSURE**

A multi DFB laser diode for generating spontaneous pulses comprises first and second DFB sections each of which has a substrate including a diffraction grating, an active layer formed on the substrate, a clad layer formed on the active layer and including a refraction varying layer, and an electrode formed on the active layer; and a phase tuning section including a substrate, an active layer formed on the substrate, a clad layer formed on the active layer, and an electrode isolated from the electrode of the first and second DFB sections. The refraction varying layer in the active layer of the first DFB section has a refractive index different from that of the refraction varying layer in the active layer of the second DFB section.